

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant :	Stuart Serkin et al.	Art Unit :	3692
Serial No. :	09/404,518	Examiner :	Elda G. Milef
Filed :	September 23, 1999	Conf. No. :	8450
Title :	MATCH-OFF OF ORDER FLOW IN ELECTRONIC MARKET SYSTEM		

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Commissioner for Patents

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APPEAL BRIEF ON BEHALF OF STUART SERKIN AND JOHN MALITZIS

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**(i.) Real Party In Interest**

The real party in interest in the above application is NASDAQ OMX INC.

**(ii.) Related Appeals and Interferences**

Appellant has listed in the Related Proceedings Appendix, a prior decision rendered by the Board in this case. The Appellant is not aware of any other appeals or interferences related to the above-identified patent application.

In this decision, the Board reversed a decision by the examiner finding Appellant's claims 1, 3-14, and 16-20 anticipated by May under 35 U.S.C. § 102(e). The Board also remanded the application to the Examiner pursuant to 37 C.F.R. §41.50(a)(1) for consideration of: (1) the disclosure in Tilfors relative to the patentability of claims 1, 3-14 and 16-20; and (2) whether claims 1, 3-14 and 16-20 constituted unpatentable subject matter under 35 U.S.C. § 35 U.S.C. § 101.

**(iii.) Status of Claims**

This is an appeal from the decision of the Primary examiner in an Office Action dated July 24, 2008, finally rejecting claims 1, 3-14, and 16-22. Claims 2 and 15 were canceled without prejudice. Claims 1-22 are the subject of this appeal.

**(iv.) Status of Amendments**

All amendments have been entered. Appellant filed a new Notice of Appeal on **October 24, 2008**.

**(v.) Summary of Claimed Subject Matter**

Background

This invention relates to electronic trading systems particularly financial trading systems used in equity markets. Equity markets collect, aggregate and display pre-trade information to market participants. In the Nasdaq Stock Market, for example, pre-trade information takes the

form of a quote that represents a single (or an aggregate of same-priced) principal or agency orders. A market such as the Nasdaq Stock Market provides trading platforms through which market participants may access liquidity indicated in the marketplace.<sup>1</sup>

#### Claim 1

One aspect of Appellant's invention is set out in claim 1. Claim 1 is directed to a method of executing an order. *"Referring to FIG. 1, an electronic market 10 is shown. The electronic market 10 includes client systems 12 that access a central quote/order collector facility 20. The client systems 12 can be broker/dealer systems 12a, electronic communication networks (ECN's) 12b, market-maker systems 12c, and other exchanges 12d."*<sup>2</sup>

Inventive features of claim 1 include receiving by a computer system an order from a customer of a market participant for the order. *"For any given stock, a registered market maker or ECN may directly enter a non-marketable order i.e., quote into the system 20 on behalf of its customer account, or it may sponsor the direct entry of an order by its customer."*<sup>3</sup>

Inventive features of claim 1 also include checking if a market participant identification associated with the order from the customer matches a market participant identification representing a quote in the computer system which is at a best bid or best offer price in the computer system. *"Referring now to FIG. 4, the internalize execution manager 26c is shown."*<sup>4</sup> *"For example, if MMA sends system 20 all of its quotes/orders and is at the best bid of \$20 showing 4,000 shares (attributable and non-attributable), and the MMA sends OCF 25 a 1,000 share market sell order from one its customers, OCR 25 will examine 67a the identification of the order and if it matches the identification of the market participant who is at the best bid or offer for that security, the OCP 25 will execute 67b the order against the participant's own quote, thus matching off the order on behalf of the participant."*<sup>5</sup>

Inventive features of claim 1 also include if the market participant identification matches the market participant identification representing a best bid or offer quote in the computer system, matching off the customer order against the one of the best bid or best offer quote of the

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<sup>1</sup> Appellant's Specification at page 1, lines 3-10.

<sup>2</sup> *Id.* at page 3, lines 2-7.

<sup>3</sup> *Id.* at page 4, lines 6-9.

<sup>4</sup> *Id.* at page 10, lines 4-10.

<sup>5</sup> *Id.* at page 10, lines 15-22.

matching market participant identification that is at an opposite side of a market irrespective of any other priority established for matching orders in the computer system. *"OCR 25 will examine 67a the identification of the order and if it matches the identification of the market participant who is at the best bid or offer for that security, the OCP 25 will execute 67b the order against the participant's own quote, thus matching off the order on behalf of the participant."*<sup>6</sup> *"Internalize execution manager 26c matches-off a participant's agency or proprietary orders against that participant's quotes/order before the order is sent for time/price priority execution in the quote/order collector facility 20."*<sup>7</sup>

#### Claim 11

Claim 11 represents another aspect of the invention.

The inventive features of claim 1 include a computer system including a processor, memory coupled to the processor; and a computer storage medium storing a computer program product. *The quote/order collector facility 20 is comprised of one or preferably a plurality of server computers generally denoted as 22 including a processor 22a, main memory 22b and storage 22c. The storage system 22c includes quote/order collector process 25 that is executed in memory 22b.*<sup>8</sup>

Inventive features of claim 11 includes receiving orders and matches orders against quotes posted in the system on a time priority basis. *"Referring to FIG. 3A, the order collector process 25 receives orders/quotes and time stamps 42 each order/quote upon receipt. This time stamp determines the order's/quote's ranking for automated execution."*<sup>9</sup>

Inventive features of claim 11 also include determining if a market participant identification associated with a received customer order matches a market participant identification representing a quote in the system that is at a best bid or best offer price in the system and if the market participant identification matches the market participant identification representing a best bid or offer quote in the system, matching off the customer order against the one of the best bid or best offer quote of the matching market participant identification that is at

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<sup>6</sup> Appellant's Specification at lines 20-22.

<sup>7</sup> *Id.* at page 10, lines 4-10.

<sup>8</sup> *Id.* at page 3, lines 9-12.

<sup>9</sup> *Id.* at page 7, lines 6-9.

an opposite side of the market irrespective of any other priority established for matching orders in the system. *"Referring now to FIG. 4, the internalize execution manager 26c is shown. Another benefit of the system 20 is that when Quoting Market Participant is at the best bid/best offer, internalize execution manager 26c matches-off a participant's agency or proprietary orders against that participant's quotes/order before the order is sent for time/price priority execution in the quote/order collector facility 20. Quoting Market Participants encounter difficulties in managing their book because Quoting Market Participants may transmit only a single quote (which may represent a single order or an aggregate of proprietary/agency interest at a single price).*

*For example, if MMA sends system 20 all of its quotes/orders and is at the best bid of \$20 showing 4,000 shares (attributable and non-attributable), and the MMA sends OCF 25 a 1,000 share market sell order from one its customers, OCR 25 will examine 67a the identification of the order and if it matches the identification of the market participant who is at the best bid or offer for that security, the OCP 25 will execute 67b the order against the participant's own quote, thus matching off the order on behalf of the participant."*<sup>10</sup>

#### Claim 18

Claim 18 is directed to a computer program product residing on a computer readable medium for operating a trading system. *"The quote/order collector facility 20 is comprised of one or preferably a plurality of server computers generally denoted as 22 including a processor 22a, main memory 22b and storage 22c. The storage system 22c includes quote/order collector process 25 that is executed in memory 22b. In general, server 22 is a complex computer server, the details of which are not important to an understanding of the present invention."*<sup>11</sup>

Inventive features of claim 18 include instructions to receive orders and match orders against quotes posted in the system on a time priority basis. This feature is supported generally as an analogous feature of claim 1.

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<sup>10</sup> Appellant's Specification at page 10, lines 4-23.

<sup>11</sup> *Id.* at page 3, lines 19-25.

Inventive features of claim 18 include instructions to check if a market participant identification associated with a received customer order matches a market participant identification representing a quote in the system that is at a best bid or best offer price in the system. This feature is supported generally as an analogous feature of claim 1.

Inventive features of claim 18 include instructions match off the received customer order against the quote of the matching market participant identification at an opposite side of the market irrespective of a different priority established for matching orders in the system. This feature is supported generally as an analogous feature of claim 1.

**(vi.) Grounds of Rejection to be Reviewed on Appeal**

1. Claims 1, 3, 6-12, 14, 17, 18, and 20-22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,405,180 to Tilfors et al.
2. Claims 4, 5, 13, 16, 19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tilfors, in view of U.S. Patent No. 6,421,653 to May.

**(vii.) Argument**

Obviousness

"It is well established that the burden is on the PTO to establish a prima facie showing of obviousness, *In re Fritsch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (C.C.P.A., 1972)."

In *KSR Intl. Co. v. Teleflex Inc.*, 127 S.Ct. 1727 (2007), the Supreme Court reversed a decision by the Court of Appeal's for the Federal Circuit decision that reversed a summary judgment of obviousness on the ground that the district court had not adequately identified a motivation to combine two prior art references. The invention was a combination of a prior art repositionable gas pedal, with prior art electronic (rather than mechanical cable) gas pedal position sensing. The Court first rejected the "rigid" teaching suggestion motivation (TSM) requirement applied by the Federal Circuit, since the Court's obviousness decisions had all advocated a "flexible" and "functional" approach that cautioned against "granting a patent based on the combination of elements found in the prior art."

In *KSR* the Supreme Court even while stating that: "the Court of Appeals drew the wrong conclusion from the risk of courts and patent examiners falling prey to hindsight bias," warned that: "a factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning."

The Court of Appeals, finally, drew the wrong conclusion from the risk of courts and patent examiners falling prey to hindsight bias. A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning. See *Graham*, 383 U. S., at 36 (warning against a "temptation to read into the prior art the teachings of the invention in issue" and instructing courts to "'guard against slipping into the use of hindsight'" (quoting *Monroe Auto Equipment Co. v. Heckethorn Mfg. & Supply Co.*, 332 F. 2d 406, 412 (CA6 1964))). Rigid preventative rules that deny factfinders recourse to common sense, however, are neither necessary under our case law nor consistent with it.

With respect to the genesis of the TSM requirement, the Court noted that although "As is clear from cases such as *Adams*<sup>12</sup>, a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known."

"The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." *In re Gordon*, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984).

Although the Commissioner suggests that [the structure in the primary prior art reference] could readily be modified to form the [claimed] structure, "[t]he mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." *In re Laskowski*, 10 U.S.P.Q. 2d 1397, 1398 (Fed. Cir. 1989).

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<sup>12</sup> *United States v. Adams*, 383 U. S. 39, 40 (1966)

"The claimed invention must be considered as a whole, and the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination." *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 U.S.P.Q. 481, 488 (Fed. Cir. 1984).

Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under Section 103, teachings of references can be combined only if there is some suggestion or incentive to do so. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984) (emphasis in original, footnotes omitted).

"The critical inquiry is whether 'there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination.'" *Fromson v. Advance Offset Plate, Inc.*, 225 U.S.P.Q. 26, 31 (Fed. Cir. 1985).

### Discussion

#### **1. Claims 1, 3, 6-12, 14, 17, 18, and 20-22 are patentable over Tilfors et al.**

##### Claims 1, 11, and 18

For the purposes of this appeal only, claims 1, 11 and 18 stand or fall together. Claim 1 is representative of this group of claims.

Claim 1 is directed to a computer implemented method of executing an order. Claim 1 includes the features of: receiving by a computer system an order from a customer of a market participant for the order, checking if a market participant identification associated with the order from the customer matches a market participant identification representing a quote in the computer system which is at a best bid or best offer price in the computer system; and if the market participant identification matches the market participant identification representing a best bid or offer quote in the computer system, matching off the customer order against the one of the best bid or best offer quote of the matching market participant identification that is at an opposite



side of a market irrespective of any other priority established for matching orders in the computer system.

Claim 1 is neither described nor rendered obvious by Tilfors. In particular, Tilfors does not describe or render obvious "checking if a market participant identification associated with the order from the customer matches a market participant identification representing a quote ...which is at a best bid or best offer price ...and if the market participant identification matches ... matching off the customer order against the ... offer quote of the matching market participant ... irrespective of any other priority established for matching orders in the computer system."

The examiner stated in part:

Re claim 1: Tilfors discloses:

...for the order, checking if a market participant identification associated with the order from the customer matches a market participant identification representing a quote in the computer system which is at the best bid or best offer price in the computer system (Tilfors checks the market participant identification associated with the order as being one of a customer, a firm or another market maker. Col. 4, lines 15-17));

... matching off the customer order against the one of the best bid or best offer quote of the matching market participant identification that is at the opposite side of the market irrespective of any other priority established for matching orders in the computer system (Tilfors discloses using different types of trading procedures based on the types of counterpart being matched (col. 4, lines 18-26) all the while insuring that the quote in the system being used is at a best bid or best offer(col. 4 lines 37-45)). Tilfors provide for a procedure for executing a trade for matching prices between two market makers (col. 5 lines 55-67, col. 6 lines 1-14). Furthermore, it is obvious that Tilfors matches off the customer order against the one of the best bid or best offer quote of the matching market participant identification that is opposite irrespective of any other priority established for matching orders in the system because Tilfors discloses "it is desired that the spread be smaller than it is today, without forcing the market makers to take the risk of making undesired matches" (see cols. 1-2).

The examiner argues that: "Tilfors checks the market participant identification associated with the order as being one of a customer, a firm or another market maker." Appellant disagrees. Rather, Tilfors adopts the designations of "customer, firm or market maker" in order to group different investor types, rather than identifying a particular market participant. For example, Tilfors describes, "the terms 'firms' and 'customer' are used for private investors and professional investors, respectively [and] ... other *types of investors* are possible."<sup>13</sup> Designating an investor type does not identify the market participant associated with an order, nor is the designation matched against a market

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<sup>13</sup> See Tilfors at col 4, lines 1-5.

participant identification representing a quote in the computer system which is at a best bid or best offer price in the computer system, as required by claim 1.

Furthermore, Tilfors' designations of investor types requires checking the identity of the counterparty and it is the counterparty designation that is used to group orders into types.<sup>14</sup> That is, the counterparty fields in an order and not a market participant identification are checked at step 111. In contrast to Tilfors, claim 1 requires "checking if a market participant identification associated with the order ... matches a market participant identification representing a quote in the computer system." According to Tilfors "Quotes can only be used by market maker members in instruments where they are defined as market makers."<sup>15</sup> Given this teaching from Tilfors, "customer, firm or market maker" types cannot meet the feature of a market participant identification representing a quote in the system, because only market makers, acting as market makers can have quotes in the system.

Even, assuming *arguendo*, that the designations of "customer, firm or market maker" were market participant identifications representing a quote in the system, which the Appellants do not concede, Tilfors does not check if its designation of investor type matches another market participant identification representing a quote in the computer system.

In the last action, in response to a similar argument by the Appellant, the examiner responded that:

In Tilfors, the market maker may have itself as its client, therefore, the customer is one in the same with the market participant when the broker/dealer acts on its own behalf as a market maker(Tilfors, col. 1-2, col. 3 lines 5-19). Tilfors checks the market participant identification associated with the order as being one of a customer, a firm, or another market maker (Tilfors, col. 4, 11, 15-17).<sup>16</sup>

Appellant again disagrees with this reasoning. If a market maker has itself as a client, on an order, the order is not a customer order as the examiner argues, but it is designated as a firm order.<sup>17</sup> Therefore, what the examiner proposes completely contradicts the teachings of Tilfors and therefore weighs heavily against Tilfors

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<sup>14</sup> See Tilfors at col. 4, lines 20-26.

<sup>15</sup> *Id.* at col. 1, lines 56-57.

<sup>16</sup> See Office Action dated July 24, 2008 at page 8.

<sup>17</sup> See Tilfors at col. 1, lines 58-60.

suggesting the feature of: "checking if a market participant identification associated with the order from the customer matches a market participant identification representing a quote in the computer system."

The examiner also argues with respect to claim 1:

The applicant's attention is directed to col. 2 in particular lines 39-56 wherein Tilfors discloses that the algorithm is executed when a market maker participates in a trade. Tilfors discloses that the algorithm is executed when a market maker participates in a trade. In a preferred embodiment there are three different methods in the algorithm depending on the counter part of the trade. The methods/counterparts being customer, firm, market maker.<sup>18</sup>

While Tilfors discloses using different algorithms depending on the type of investor, the algorithms do not determine whether a match exists with a market participant identification representing a quote in the computer system and trading on the order irrespective of priority in the system. Rather, Tilfors merely uses the algorithms to determine the *volume* of shares to be traded based on the type of investor. For example, Tilfors describes that when "matching between a selling market maker and a buying firm ... the market maker can have reduced volume (risk)..."<sup>19</sup> Instead of matching market participant identifications, as described in claim 1, Tilfors was concerned with the *volume* of trades and "making it possible for market makers to ... [have] a very small spread."<sup>20</sup>

The examiner further argues that "Tilfors provide[s] for a procedure for executing a trade for matching prices between two market makers." However, Tilfors describes that: "when matching between a selling market maker and a buying market maker ... no match takes place, instead the incoming order/quote is inserted into the order book."<sup>21</sup> While Tilfors discloses that, in certain instances, the market makers' quotes may be manually matched at a later time, this scenario occurs only after the quotes in the order book are crossed or locked for a predefined time and the market maker still wants to trade.<sup>22</sup> Tilfors' arrangement is distinct from the matching process in claim 1 which requires that if the market participant identification matches the market participant

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<sup>18</sup> See Office Action at page 8.

<sup>19</sup> See Tilfors at col. 4, line 63 – col. 5, line 3.

<sup>20</sup> *Id.* at col. 1, lines 49-58.

<sup>21</sup> *Id.* at col. 5, lines 22-25.

<sup>22</sup> *Id.* at col. 5, line 55 – col. 6, line 14.

identification representing a best bid or offer quote in the computer system ... the customer order [is matched off] irrespective of any other priority established for matching orders in the computer system.

Claim 1 also requires that the matching ... quote in the computer system is ... at a best bid or best offer price. The examiner argues:

**Furthermore, it is obvious that Tilfors matches off the customer order against the one of the best bid or best offer quote of the matching market participant identification that is opposite irrespective of any other priority established for matching orders in the system because Tilfors discloses "it is desired that the spread be smaller than it is today, without forcing the market makers to take the risk of making undesired matches" (see cols. 1-2).**

Tilfors' teachings to minimize trading spread is not relevant to a match off of customer orders irrespective of established priority for matching. At best, Tilfors' disclosure merely indicates that the difference between the selling price and the buying price is smaller than normal. Contrary to the examiner's assertion, Tilfors acknowledges that orders are matched at a variety of price levels.<sup>23</sup> In fact, Tilfors describes that the exchange has "a lot of volume available ... both at the best bid and offer and at a worse price."<sup>24</sup>

Accordingly, Tilfors neither describes nor renders obvious all of the features of claim 1.

#### Claim 3 and 21

For the purposes of this appeal only, claims 3 and 21 stand or fall together. Claim 3 is representative of this group of claims.

Claim 3, further limits claim 1 by requiring that "matching off the order without regard to any priority is with respect to a time priority of a plurality of quotes in the computer system, at the opposite side of the market to the customer order."

The examiner argues that:

**Tilfors discloses: wherein matching-off the order without regard to any priority is with respect to a time priority of other quotes in the computer**

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<sup>23</sup> *Id.* at col. 4, lines 6-17.

<sup>24</sup> *Id.* at col. 1, lines 30-33.

system, at the opposite side of the market to the customer order -see col. 1. Tilfors discloses that in existing exchange systems, a simple first in first served model [time priority] in matching is commonly used. The first in first served model forces the market makers to take the risk of making undesired matches because of the requirement by the exchange for market makers to enter two way quotes. Tilfors provides a method of matching based on different or type of counterpart, as well as parameters specified by the market maker -see col. 2.

Although Tilfors mentions the use of a first in-first server model, Tilfors' disclosure does not describe matching off the customer order, in particular, irrespective of the time priority established for matching orders in Tilfors' system. As discussed above, Tilfors uses the different investor types to adjust the *volume* of shares that are matched. This change in *volume* is not relevant to an established *time priority* for matching orders in the system.

Claims 6, 14, 17, and 20

For the purposes of this appeal only, claims 6, 14, 17 and 20 stand or fall together. Claim 6 is representative of this group of claims.

Claim 6 further limits claim 1, by requiring that: "routing the order to a market participant corresponding to said market participant that has the one of the best bid or best offer that is at the opposite side of the market."

The examiner argues that:

Re claims 6,7: Tilfors disclose:  
routing the order to a market participant corresponding to said market participant that has the one of the best bid or best offer that is at the opposite side of the market; wherein the customer order is checked against proprietary quotes and agency quotes of a market participant identification representing a quote in the computer system which is at the best bid or offer-see cols. 1-6.

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Claims 14 and 17 have similar limitations found in claim 6 above, and therefore are rejected by the same art and rationale.

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Re claims 18, 20: Further a computer program product would have been necessary to perform the method of previously rejected claims 11,14 and are therefore rejected using the same art and rationale.

While Appellants concede that Tilfors describes a matching process in Figure 3, the process merely includes receiving a buy price 301, receiving a sell price 303, checking for

matching orders 305 and then repeating the process.<sup>25</sup> Tilfors is silent as to routing the order, let alone, that the order is routed to the market participant corresponding to said market participant that has the one of the best bid or best offer that is at the opposite side of the market within its process.

Claims 7, 8 and 22

For the purposes of this appeal only, claims 7, 8 and 22 stand or fall together. Claim 7 is representative of this group of claims.

Claim 7, further limits claim 1 by requiring that "the customer order is checked against proprietary quotes and agency quotes of a market participant identification representing a quote in the computer system which is at the best bid or best offer."

The examiner argues that:

**Re claims 6,7: Tilfors disclose:**  
routing the order to a market participant corresponding to said market participant that has the one of the best bid or best offer that is at the opposite side of the market; wherein the customer order is checked against proprietary quotes and agency quotes of a market participant identification representing a quote in the computer system which is at the best bid or offer-see cols. 1-6.

**Re claim 8: Tilfors disclose:**  
receiving the internal book of the market participant to match-off against the market participant's posted agency or proprietary quotes-see ("order book") col. 4 lines 37-45, col. 5 line 22 to col. 6 line 44.

**Re claims 21,22: Further a computer program product would have been necessary to perform the method of previously rejected claims 3 and 7 and are therefore rejected using the same art and rationale.**

While Tilfors discloses a generic orderbook, nothing in this passage, or the rest of the reference describes, or much less suggests, proprietary quotes and agency quotes. As recited in the applicant's specification, for example, a proprietary quote can represent a market makers own trading interest and an agency quote can represent trading interest of a sponsored entity.<sup>26</sup> In contrast, Tilfors does not check for matches between market makers' own quotes or deal with

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<sup>25</sup> See Tilfors at col. 5, lines 55 - col. 6, lines 10.

<sup>26</sup> See Appellants' Specification at page 3, line 26 - page 4, line 13.

matches of sponsored entities. Tilfors describes that when dealing with a selling market maker and a buying market maker, no match takes place. The examiner has merely cited the majority of the reference without explaining how any of the features of Tilfors actually describe or suggest a proprietary or agency quote, let alone, that a customer order is checked against these quotes.

#### Claims 9 and 10

Claim 9, further limits claim 1 by requiring that "receiving a customer order further comprises: receiving the order via an order execution system."

Claim 10, further limits claim 1 by requiring that "receiving a customer order further comprises: receiving the order via a negotiation order entry system."

The examiner cites several sections and figures of Tilfors<sup>27</sup>, yet not of these references describe how a customer order is received. At best, Tilfors merely describes that a market maker "sends in prices to the order book."<sup>28</sup> Nonetheless, sending prices to the order book does not describe or render obvious receiving orders via either an order execution system or a negotiation order entry system.

#### Claims 12

Claims 12 is allowable with claim 1.

### **2. Claims 4, 5, 13, 16 and 19 are patentable over Tilfors et al., in view of May.**

#### Claims 4, 5, 13, 16 and 19

For the purposes of this appeal only, claims 4, 5, 13, 16 and 19 stand or fall together. Claim 4 is representative of this group of claims.

Claim 4, further limits claim 1 by requiring "calling a cancel request to cancel a quote at the side of the market in which a matched off order will be executed." Claim 4 distinguishes

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<sup>27</sup> The examiner argues in Office Action at Page 5:

*Re claim 9:* see FIG. 1; col. 3 line 47 to col. 4;

*Re claim 10:* see col. 1, col. 4 lines. 37-45; col. 5 line 55-col. 6 line 34; FIGs. 1-4.

<sup>28</sup> See Tilfors at col. 3, lines 52-55.

over the alleged combination of Tilfors and May, because the alleged combination of references neither describes nor suggests "... cancel[ing] a quote at the side of the market in which a matched off order will be executed."

The examiner argues:

**Re claims 4 and 5:** Although Tilfors disclose "quotes that may result in a trade between market makers are hidden for some time before being matched, thus giving the market makers a chance to back off"-see col. 2 lines 10-13, Tilfors do not explicitly disclose calling a cancel request to cancel a quote at the side of the market in which a matched off order will be executed. May however teaches ("The present invention provides at least three order management functions to facilitate the canceling or temporarily suspending the order..."—see col. 35, lines 41-55. It would have been obvious at the time that the invention was made to modify Tilfors to explicitly disclose canceling an order as taught by May in order to cancel a trade quickly due to adverse market changes.

**Claims 13 and 16** have similar limitations found in claims 4 and 5 above, and therefore are rejected by the same art and rationale.

**Re claim 19:** Further a computer program product would have been necessary to perform the method of previously rejected claim 13 and is therefore rejected using the same art and rationale

The examiner already concedes that Tilfors does not disclose all of the claimed features and relies on May for the teaching of calling a cancel request. May does not cure the deficiencies of Tilfors. While May includes various order management functions, for cancellation of orders, claim 4 requires "calling a cancel request to cancel a quote at the side of the market in which a matched off order will be executed." May does not describe canceling of quotes, which function minimizes a market maker's dual-liability for the quote on the side of the market that the matched off order would be executed against if the market maker maintain that customer order in its own orderbook.



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Attorney's Docket No.: 09857-0030001

Conclusion

Appellant submits that claims 1, 3, 6-12, 14, 17, 18, and 20-22 are allowable over U.S. Patent No. 6,405,180 to Tilfors and that claims 4, 5, 13, 16 and 19 are allowable over Tilfors, in view of U.S. Patent No. 6,421,653 to May.

Respectfully submitted,

Date: December 23, 2008

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### Appendix of Claims

1. A computer implemented method of executing an order, the method comprising:  
receiving by a computer system an order from a customer of a market participant for the order, checking if a market participant identification associated with the order from the customer matches a market participant identification representing a quote in the computer system which is at a best bid or best offer price in the computer system; and if the market participant identification matches the market participant identification representing a best bid or offer quote in the computer system,

matching off the customer order against the one of the best bid or best offer quote of the matching market participant identification that is at an opposite side of a market irrespective of any other priority established for matching orders in the computer system.

2. (canceled)

3. The method of claim 1 wherein matching off the order without regard to any priority is with respect to a time priority of a plurality of quotes in the computer system, at the opposite side of the market to the customer order.

4. The method of claim 1 further comprising:  
calling a cancel request to cancel a quote at the side of the market in which a matched off order will be executed.

5. The method of claim 1 further comprising:  
calling a cancel request prior to matching off the order to cancel a quote at the side of the market at which an matched off order will be executed.

6. The method of claim 1 further comprises routing the order to a market participant corresponding to said market participant that has the one of the best bid or best offer that is at the opposite side of the market.

7. The method of claim 1 wherein the customer order is checked against proprietary quotes and agency quotes of a market participant identification representing a quote in the computer system which is at the best bid or best offer.

8. The method of claim 1 further comprising:  
receiving an internal book of the market participant to match-off against the market participant's posted agency or proprietary quotes.

9. The method of claim 1 wherein receiving a customer order further comprises:  
receiving the order via an order execution system.

10. The method of claim 1 wherein receiving a customer order further comprises:  
receiving the order via a negotiation order entry system.

11. A system comprises:  
a computer system comprising:  
a processor;  
memory coupled to the processor; and  
a computer storage medium storing a computer program product comprising instructions to cause the computer system to:

receive orders and match orders against quotes posted in the computer system on a time priority basis;

determines if a market participant identification associated with a received customer order matches a market participant identification representing a quote in the system that is at a best bid or best offer price in the system and if the market participant identification matches the market participant identification representing a best bid or offer quote in the system, matches off the customer order against the one of the best bid or best offer quote of the matching market participant identification that is at an opposite side of the market irrespective of any other priority established for matching orders in the system.

12. The system of claim 11 further comprises instructions to :  
execute the order against the one of the best bid or best offer that is at the opposite side of  
the market.

13. The system of claim 11 further comprising instructions to:  
request a cancellation of a quote at a side of the market in which an internalized order  
will be executed.

14. The system of claim 11 further comprising instructions to:  
route an order to a market participant corresponding to the participant that has the one of  
the best bid or best offer that is at the opposite side of the market.

15. (Canceled)

16. The system of claim 12 further comprising instructions to:  
request a cancellation of a quote at a side of the market in which an internalized order  
will be executed.

17. The system of claim 12 further comprising instructions to:  
route an order to a market participant corresponding to the participant that has the one of  
the best bid or best offer that is at the opposite side of the market.

18. A computer program product residing on a computer readable medium for  
operating a trading system comprises instructions for causing a computer to:  
receive orders and match orders against quotes posted in the system on a time priority  
basis;  
check if a market participant identification associated with a received customer order  
matches a market participant identification representing a quote in the system that is at a best bid  
or best offer price in the system; and

match off the received customer order against the quote of the matching market participant identification at an opposite side of the market irrespective of a different priority established for matching orders in the system.

19. The computer program product of claim 18 further comprising instructions to: request a cancellation of a quote at a side of the market in which the matched-off order will be executed.

20. The computer program product of claim 18 further comprising instructions to: route the order to a market participant corresponding to the participant that has the one of the best bid or best offer that is at the opposite side of the market.

21. The computer program product of claim 18 wherein the instructions to match off irrespective of a priority established in the system, execute without regard a time priority of a plurality of quotes at the opposite side of the market to the customer order.

22. The computer program product of claim 18 wherein the instructions to check, compare the customer order against proprietary quotes and agency quotes of a market participant identification representing a quote which is at the best bid or best offer.

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## **Evidence Appendix**

None

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### **Related Proceedings Appendix**

Stuart Serkin, et al. Appeal No. 2006-3104, (Board of Patent Appeals and Interferences)  
Application 09/404,518, Decided: November 8, 2007.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* STUART SERKIN and JOHN MALITZIS

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Appeal 2006-3104  
Application 09/404,518  
Technology Center 3600

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Decided: November 8, 2007

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Before JENNIFER D. BAHR, ANTON W. FETTING, and JOSEPH A.  
FISCHETTI, *Administrative Patent Judges*.

FISCHETTI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants seek our review under 35 U.S.C. § 134 of the Examiner's final rejection of claims 1, 3-14, and 16-20. We have jurisdiction under 35 U.S.C. § 6(b) (2002).



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*Preliminary Matter*

The Advisory Action mailed October 14, 2003 does not indicate whether the Amendment filed September 22, 2003, subsequent to the Final Rejection, has been entered. On page 3 of the Appeal Brief, Appellants indicate that the claims in the Claims Appendix reflect entry of the Amendment After Final filed September 22, 2003.<sup>1</sup> The Examiner's Answer on page 3 appears to confirm entry of this Amendment by stating: (1) "The appellant's statement of the status of amendments after final rejection contained in the brief is correct," and (2) "[t]he copy of the appealed claims contained in the Appendix to the brief is correct." We thus presume that the Amendment filed September 22, 2003 has been entered.

The Examiner's Answer on page 2, in the "Status of Claims" indicates that "[c]laims 1, 3, 8, 11, 13, 14, 16, 18, [and] 19 were rejected under 35 U.S.C. [§] 112, second paragraph, for lack of antecedent basis." The Examiner, however, does not repeat the rejection under 35 U.S.C. § 112, second paragraph, in the "Grounds of Rejection" section on pages 3 and 4 of the decision. Therefore, we presume the Examiner considers the Amendment filed September 22, 2003 to have overcome the rejection under 35 U.S.C. § 112, second paragraph.<sup>2</sup> We thus treat the rejection under 35 U.S.C. § 112, second paragraph, as having been withdrawn.

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<sup>1</sup> The Amendment After Final Certificate of Mailing date is September 16, 2003, thus Appellants' Brief refers to this Amendment as the September 16, 2003 Amendment.

<sup>2</sup> The rejection made by the Examiner under 35 U.S.C. § 112, second paragraph identified certain claim terms as having insufficient antecedent basis. The Amendment After Final dated September 22, 2003 corrected these instances by changing the definite article preceding each term involved in the rejection to an

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Claim 1, reproduced below, is representative of the subject matter on appeal.

1. A method of executing an order in a market system comprises:  
receiving an order from a customer of a market participant; for the order, checking if a market participant identification associated with the order from the customer matches a market participant identification representing a quote in the system which is at a best bid or best offer price in the system; and if the market participant identification matches the market participant identification representing a best bid or offer quote in the system, matching off the customer order against the one of the best bid or best offer quote of the matching market participant identification that is at an opposite side of a market irrespective of any other priority established for matching orders in the system.

The Examiner relies upon the following as evidence of unpatentability:

May	US 6,421,653 B1	Jul. 16, 2002
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In addition to the prior art cited by the Examiner, we also refer to the following additional prior art.

Tilfors	US 6,405,180 B2	Jun. 11, 2002
	(35 U.S.C. § 102(e) Nov. 5, 1998)	

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indefinite article.

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*The 35 U.S.C. 102(e) Rejection*

All appealed claims 1, 3-14, and 16-20 stand rejected under 35 U.S.C. § 102(e) as being anticipated by May.

According to the Examiner, May “teaches matching market participants using credit preference data to allow the counterparties to identify which orders meet the eligibility requirements set forth by the system to trade. - see col. 5, lines 64-col. 6, line 2” (Answer 12). Further, the Examiner considers the coded credit preferences in May as the equivalent of “the last name of the individual involved in the trade,” and thus considers May to anticipate the claims (Answer 12, 13).

However, although we find that in May an order is evaluated according to defined credit preferences (May, col. 30, ll. 25-26), we do not consider credit eligibility, which does not uniquely identify a participant, to equate to the identification of a market participant. The Specification on page 2 lines 4-9 describes the purpose of matching-off orders by using market participation identification is to insure that a given market participant may place its book of quotes in the market and be assured that the system, by knowing the identities of the market participants, will find and match off the given market participant’s quotes over others’ if the given participant’s quote is at the best price. In May, the credit eligibility matching results in color coded tradability signals used by market participants to generate matches (May col. 30, ll. 20-67) and occurs regardless of the participant’s identity. Furthermore, all independent claims 1, 11, and 18 require the steps of:

[1] ...checking if a market participant identification  
associated with the order from the customer *matches* a

market participant identification representing a quote in the system which is at a best bid or best offer price in the system..., [and if so then] ... [2] *matching* off the customer order against the one of the best bid or best offer quote of the matching market participant identification that is at an opposite side of a market irrespective of any other [or different] priority established for matching orders in the system (emphasis added).

We do not find that May matches market participants' identities. *Webster's Collegiate Dictionary* (Tenth Ed., 1996) defines "match", *inter alia*, as "4: to fit together or make suitable for fitting together." In May, the match or fit between parties occurs by checking credit preferences based on credit worthiness (May, col. 29, ll. 21-23, col. 30 ll. 20-43), and not the identification of the party as required by the claims. Since the counterparties each input desired credit preferences into the system (May, col. 30, ll. 40-43) as the metric for matching, and not party identity, matching based on identity does not occur.

The Examiner maintains that the Credit Over-Ride Process, because it enables a user to disclose his /her identity even though initially refused a trade, constitutes matching as required by the claims (Answer 10, 11). However, we disagree because May describes in column 30 lines 53-67 to column 31 lines 1-4, that the Credit Over-Ride Process does not always result in a match for two reasons: (1) the poster may decline the viewer's offer even after the viewer's identity is known (May, col.30, l. 66); and (2) the Credit Over-Ride Process is subordinate to other trades during the over ride process and the ultimate trade may go to another viewer (May, col. 31, ll. 1-4).

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Therefore, the 35 U.S.C. § 102(e) rejection of claims 1, 3-14, and 16-20 based on May cannot be sustained. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 827 (1987).

#### REMAND

1. We remand this application to the Examiner for consideration of Tilfors (U.S. Patent No. 6,405,180 B2; issued Jun. 11, 2002). Tilfors discloses a method of executing an order in a market system (Tilfors, col. 1, ll. 14-19). We understand that a market maker may have itself as its client. Thus, in Tilfors, the customer is one in the same with the market participant when the broker/dealer acts on its own behalf as a market maker. Further, for a given order, Tilfors checks the market participant identification associated with the order as being one of a customer, a firm, or another market maker (Tilfors, col. 4, ll. 15-17). Tilfors discloses using different types of trading procedures based on the type of counterpart being matched (Tilfors, col. 4, ll. 18-26) all the while insuring that the quote in the system being used is at a best bid or best offer (Tilfors, col. 4, ll. 37-45). Although Tilfors discloses in column 5, lines 24 and 25 that when two market makers are counterparts no matching occurs, the embodiment of Figure 3 does appear to provide for a procedure for executing a trade for matching prices between two market makers (Tilfors, col. 5, ll. 55-67, col. 6, ll. 1-14). As such, we

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remand this application to the Examiner to consider whether any of the subject matter of the pending claims would have been obvious to one having ordinary skill in the art at the time of the invention in view of the teachings of Tilfors in combination with other pertinent art of which the Examiner is or becomes aware.

2. We also remand this application to the Examiner for consideration of whether the subject matter of claims 1-20 constitutes unpatentable subject matter under 35 U.S.C. § 101 in light of the recent decisions in, *In re Comiskey*, 499 F.3d 1365 (Fed. Cir. 2007) and *In re Nuijten*, 500 F.3d 1346, 84 USPQ2d 1495 (Fed. Cir. 2007).

With respect to claims 1 and 3-10, these claims recite only a mental process of matching without integrating a machine, or constituting a process of manufacture, or the altering a composition of matter. Thus, the Examiner should consider whether claims 1, 3-10 also should be rejected under 35 U.S.C. § 101 for this reason.

Second, the Examiner should consider whether claims 11-14, 16, and 17 likewise constitute unpatentable subject matter under 35 U.S.C. § 101 because, even though these claims recite a "system" in the preamble, the body of the claims recite only a mental process of matching, as discussed *supra*.

Finally, the Examiner should consider whether claims 18-20 constitute unpatentable subject matter under 35 U.S.C. § 101 because no physical medium is recited in these claims onto which the instructions are captured in tangible form. As such, the Examiner should consider whether a "computer program product" could be read, in its broadest reasonable interpretation, as a signal. If so, then a

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signal, under the holding in *Nuijten*, is a transitory item, and is not considered to be a “process, machine, manufacture or composition of matter”, and therefore cannot be patentable subject matter under 35 U.S.C. § 101.

#### CONCLUSIONS OF LAW

We reverse the rejection of claims 1, 3-14, and 16-20 under 35 U.S.C. § 102(e) as being anticipated by May.

#### DECISION

The decision of the Examiner to reject claims 1, 3-14 and 16-20 is reversed.

The application is remanded to the Examiner pursuant to 37 C.F.R. § 41.50(a)(1) (2006) for consideration of: (1) the disclosure in Tilfors relative to the patentability of claims 1, 3-14 and 16-20; and (2) whether claims 1, 3-14 and 16-20 constitute unpatentable subject matter under 35 U.S.C. § 35 U.S.C. § 101.

REVERSED and REMANDED

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